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Lundy Lewis

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PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
MCLEAN, VA 22102

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LUNDY LEWIS

Appeal 2009-000882
Application 09/577,231¹
Technology Center 2400

Decided:² June 23, 2009

Before LEE E. BARRETT, LANCE LEONARD BARRY, and
JEAN R. HOMERE, *Administrative Patent Judges*.

BARRETT, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ Filed May 23, 2000, titled "Method and Apparatus for Component to Service Mapping in Service Level Management (SLM)," which claims the benefit of Provisional Application 60/135,492, filed May 24, 1999.

² The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

This is an appeal under 35 U.S.C. § 134(a) from the Examiner's final rejection of claims 4 and 13-62, which are all of the pending claims. We have jurisdiction under 35 U.S.C. § 6(b).

Oral argument was held on June 10, 2009.

We affirm.

STATEMENT OF THE CASE

A. Appellant's invention

The invention relates to service level management, wherein business processes are composed of services. A state of the service is defined by one or more service parameters, and the service parameters depend upon performance of network components that support the service, e.g., component parameters. The state of the service may depend, for example, on a collection of service parameter values for availability, reliability, security, integrity and response time. A service level agreement is a contract between a supplier and a customer that identifies services supported by a network, service parameters for the services, and service levels (e.g., acceptable levels) for each service parameter. *See Abstract.*

B. The claims

The independent claims before us are claims 4, 13, 27, and 49, of which claims 4 and 13 read:

4. A method of monitoring a state of a service supported by a network, wherein the network includes a plurality of network components, wherein the service supports a business process under

service level management in association with a service level management domain, the method comprising the steps of:

selecting one or more network components on which the service depends from among the plurality of network components;

mapping the one or more selected network components to the service; monitoring the one or more selected network components to determine the state of the service;

monitoring the state of the service to detect a change in the state;

when the state of the service changes, determining a cause of the change in the state of the service by performing an action, the action comprising one or more of:

invoking a routine to determine an operational characteristic of at least one of the selected network components,

constructing a database query to determine the operational characteristic of at least one of the selected network components, and

requesting a change to one or more parameters of at least one of the selected network components.

13. A method for monitoring a service, the service supporting a business process under service level management in association with a service level agreement, wherein the service is monitored by an enterprise management system, wherein the business process depends on at least a portion of a network, the method comprising the steps of:

mapping at least one component of the network on which the service depends to the service;

monitoring, at the enterprise management system, at least one parameter of the mapped network component, the at least one parameter indicating an operational characteristic of the network component that is indicative of a state of the service, wherein the state of the service is indicative of a current level of service relative to an agreed upon level of service in the service level agreement;

determining, at the enterprise management system, the state of the service from the parameter of the monitored network component;
and

monitoring, at the enterprise management system, the state of the service to provide service level management for the business process that indicates the current level of service relative to the agreed upon level of service.

Claims App., Br. 17-18.

C. The references relied upon

Taghadoss	US 6,052,722	Apr. 18, 2000
Glitho	US 6,233,449 B1	May 15, 2001 (filed Aug. 24, 1998)
Yemini	US 6,249,755 B1	Jun. 19, 2001 (filed Jul. 15, 1997)
Bhoj	US 6,304,892 B1	Oct. 16, 2001 (filed Nov. 02, 1998)

D. The rejections

Claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Bhoj in view of Yemini.

Claims 13-17, 19-35, 37-53, and 55-62 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yemini, Bhoj, and Taghadoss.

Claims 18, 36, and 54 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yemini, Bhoj, and Taghadoss, further in view of Glitho.

PRINCIPLES OF LAW

"On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness." *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

For an obviousness rejection, the combination of references must teach or suggest to a person of ordinary skill in the art all of the claim limitations. 35 U.S.C. § 103(a).

Arguments not made are waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) ("Any arguments or authorities not included in the brief or a reply brief . . . will be refused consideration by the Board, unless good cause is shown."); *In re Watts*, 354 F.3d 1362, 1367 (Fed. Cir. 2004) ("Just as it is important that the PTO in general be barred from raising new arguments on appeal to justify or support a decision of the Board, it is important that the applicant challenging a decision not be permitted to raise arguments on appeal that were not presented to the Board." (Footnote omitted.)). *Cf. In re Baxter Travenol Labs.*, 952 F.2d 388, 392 (Fed. Cir. 1991) ("It is not the function of this court to examine the claims in greater detail than argued by an appellant, looking for nonobvious distinctions over the prior art.").

DISCUSSION

Claim 4 - Bhoj and Yemini

Issues

Does the combination of Bhoj and Yemini teach: (1) "selecting one or more network components on which the service depends from among the plurality of network components"; (2) "mapping the one or more selected network components to the service"; (3) "monitoring the one or more selected network components to determine the state of the service"; and (4) "when the state of the service changes, determining a cause of the change in the state of the service by performing an action"?

Contentions

The Examiner finds that Bhoj teaches the steps of selecting, mapping, monitoring a network component, and monitoring a state of the service, but does not teach that when the state of the service changes, determining a cause of the change by one of the recited actions (Final Rej. 2-3; Ans. 4). The Examiner finds that Yemini teaches at column 8, lines 17-67, selecting a network component, mapping the network component to a service, monitoring the state of the component to detect a change in state, and when the state of the service changes, determining a cause of change in the state of the service by performing an action (Final Rej. 3; Ans. 4-5). The Examiner concludes that it would have been obvious to combine Yemini with Bhoj, "because mapping out where a problem is occurring in a network can aid in finding a resolution to fix said network problem" (Final Rej. 4; Ans. 5).

Appellant argues that neither Bhoj nor Yemini, alone or in combination, teaches, discloses, or suggests: (1) "selecting one or more network components on which the service depends from among the plurality of network components"; (2) "mapping the one or more selected network components to the service"; (3) "monitoring the one or more selected network components to determine the state of the service"; and (4) "when the state of the service changes, determining a cause of the change in the state of the service by performing an action."

Appellant argues that neither Bhoj nor Yemini teaches "selecting one or more network components on which the service depends from among the plurality of network components." It is argued that Bhoj relates to SLAs and does not disclose or suggest that the SLAs include a selection of one or more network components (Br. 7-8). It is argued that Bhoj states that the components of an SLA include the parties, the service objectives, etc. (col. 6, lines 24-27), and none of these components teach selecting network components (Br. 8). It is argued that Bhoj precludes selecting network components in the manner claimed, because Bhoj prevents any one domain from having complete access to each of the data service systems; for example, Bhoj teaches providing an abstract view of the underlying data service system that is independent of the underlying implementation (Br. 8). It is argued that Yemini does not teach the "selecting" limitations (Br. 8-9).

Appellant argues that neither Bhoj nor Yemini teaches "mapping the one or more selected network components to the service." It is noted that the Examiner relies on column 8, lines 17-67 of Yemini, where components

entered into the system are automatically "selected" to be monitored. However, Appellant argues that Yemini relates only to describing or representing network components without reference to services (Br. 9). It is noted that the Examiner also relies on Bhoj, column 9, lines 25-52 for "selecting" and "mapping" (Final Rej. 13). Appellant argues that this does not teach "selecting" because Bhoj "does not selectively choose one or more network components that a service depends on" (Br. 10) because it collects all management data, and does not teach "mapping" because Bhoj teaches providing an abstract view of the underlying data service system that is independent of the underlying implementation (Br. 10-11).

Appellant argues that neither Bhoj nor Yemini teaches "monitoring the one or more selected network components to determine the state of the service." It is argued that Bhoj describes managing data between a requesting system and a responding system without giving the requesting system complete access to the responding data service system and that does not teach monitoring one or more selected network components (Br. 11). Appellant argues that Yemini does not teach or suggest actively monitoring components (Br. 11-12).

Appellant argues that neither Bhoj nor Yemini teaches "when the state of the service changes, determining a cause of the change in the state of the service by performing an action . . . for at least the reason that neither Bhoj nor Yemini, either alone or in combination, provide [sic] awareness over the 'state of the service'" (Br. 12).

Facts - contents of Bhoj

Bhoj describes that in independently administered control domains of a network, the system administrator in one control domain is not able to access another control domain to detect problems in that control domain, or to measure service performance of the other data service system unless the system administrator is given access to the other control domain (col. 2, ll. 4-13). Bhoj relates to a management system for accessing selective management data and/or measurement information in accordance with a predetermined service agreement from a number of independently administered data service systems (col. 2, ll. 38-54).

Figure 3 of Bhoj shows a data access network system 30 that includes a number of independently administered data service systems 31-33 connected together via a network 34 (col. 3, ll. 53-61). The data access network system 30 includes a management system formed of a number of service management systems 31a-33a, each located in one the data service systems 31-33 (col. 3, l. 62 - col. 4, l. 1). Each service management system 31a-33a can provide selective management data of the underlying data service system to another requesting service management system located in another data service system in accordance with a predetermined service level agreement between the two domains (col. 4, ll. 1-9).

Bhoj describes that service level agreements (SLAs) are used to define agreements among the data service systems 31-33 to share resources, and to allow each of the data service systems to offer service quality guarantees to their respective customers (col. 5, l. 67, to col. 6, l. 4). An SLA is a contract

between the provider and the user that specifies the level of service expected during its term. An SLA can specify levels of service such as 100% availability of the backbone of the service provider, average monthly latency of not more than 85 milliseconds round-trip, notification of outage within 15 minutes of an outage, installation by a quoted date, etc. (col. 6, ll. 28-61).

The SLAs are converted into a contract specification (contract) to be used by the service management systems (col. 7, ll. 22-25). Bhoj states:

A contract specification is derived from an SLA to indicate the service attributes that are meaningful for correct service behavior. The contract specification contains both the service attributes and the bounds within which the service attributes must stay in order for the service to behave in a desired manner. Attributes must both be quantifiable and measurable to be included in a contract specification.

Col. 7, ll. 25-32.

Bhoj describes that the "service model" of the corresponding data service system offers the agreed data service as follows:

A service model of a data service system describes the service implemented by the corresponding data service system as well as the dependencies between the service components within the data service system. *The service model identifies the various components of the data service system that enable the service. For example, if the service being managed is electronic mail, the service model would list the components as the e-mail server host, the networks connecting the e-mail host to the Internet, the e-mail application itself, the name server used to resolve host names to Internet addresses, and so on.* The service model also expresses interdependencies that exist among the different components of the service. From the above e-mail example, all components identified in the service model should function properly for the e-mail service to work. The interdependencies capture the cause and effect between the

components of a service. *The service model also identifies the measurements and metrics that are available from each component.* Thus, the e-mail server could identify the number of e-mail transactions, and active measurements could be used to get an estimate of the response time seen by e-mail clients. . . . As described above, a service model information includes customer dependent data and system dependent data. [Emphasis added.]

Col. 9, ll. 25-52.

Figure 5 of Bhoj shows a service management system 100, which can be one of the service management systems 31a-33a of Figure 3. The service management system 100 includes a service manager 200 connected to a contract repository 210 to receive contract templates. Bhoj describes connection to a local system 240:

The service manager 200 is also connected to a local measurement/management system 240 (hereinafter referred to as local system 240). The local system 240 provides all management data of the data service system within which the service management system 100 is located to the service manager 200. *The local system 240 collects all the management data from the local infrastructure and applications of the underlying data service system of the service management system 100.* Based on the management data collected, the local system 240 provides an abstract view of the underlying data service system to the service manager 200 that is independent of the underlying implementation. The service manager 200 uses software and/or hardware tools as means to obtain the management data and to provide the abstract view. [Emphasis added.]

Col. 11, ll. 24-38.

Bhoj further describes connection to a service model module 260:

The service manager 200 is also connected to a service model module 260. The service model module 260 stores the service model

information of the data service system within which the service management system 100 is located. As described above, the service model includes a description of the service that the data service system of the service management system 100 is managing as well as the dependencies between the service components of the underlying data service system.

Col. 12, ll. 19-27.

Analysis

Bhoj describes that the "service model of a data service system describes the service implemented by the corresponding data service system as well as the dependencies between the service components within the data service system" (col. 9, ll. 25-28). The service model is stored in the service model module 260, which is part of the service management system 100 of Figure 5 located in a data service system 31-33 of Figure 3. We interpret the "service implemented by the corresponding data service system" to correspond to the claimed "service supported by a network" in claim 4.

Bhoj describes:

The service model identifies the various components of the data service system that enable the service. For example, if the service being managed is electronic mail, the service model would list the components as the e-mail server host, the networks connecting the e-mail host to the Internet, the e-mail application itself, the name server used to resolve host names to Internet addresses, and so on.

Col. 9, ll. 28-35. We find that identifying components that enable the service teaches the claim limitations of "selecting one or more network components on which the service depends from among the plurality of network components" and "mapping the one or more selected network

components to the service." That is, in the example, the e-mail service depends on the e-mail server host, the networks connecting the e-mail host to the Internet, and so on. These components are "mapped" to the e-mail service because they are identified with the service. "Mapping" only requires some association between components and the service, e.g., the "component-to-service parameter mapping" can be declaring that some component parameter is a service parameter (a one-to-one mapping) (Spec. 33: 12-21).

Appellant argues that the SLA relied upon by the Examiner does not teach or suggest the "selecting" or "mapping" steps (Br. 7-9). It is argued that Yemini does not cure the deficiencies of Bhoj (Br. 8-11). It is argued that the Examiner's reasoning that the claim language could be interpreted as all network components being selected relies on the incorrect presumption that the service depends on every component of a network (Reply Br. 2). It is argued that the Examiner fails to identify any passage of Bhoj or Yemini that teaches the "selecting" and "mapping" steps (Reply Br. 3). Appellant argues (Reply Br. 3) that the Examiner's finding that Bhoj teaches "selecting" because "the system 'selects' [an] error to find out why it is in error" (Ans. 16) does not address the claim language of "selecting one or more network components on which the service depends." It is argued that Bhoj and Yemini do not disclose mapping (Br. 9; Reply Br. 4).

We review the teachings of the references, not just the Examiner's reasoning. The Examiner pointed to column 9, lines 25-52, at page 13 of the Final Rejection, and we find that this part of Bhoj teaches the limitations of

"selecting" and "mapping" as discussed above. Bhoj teaches that "the management data are abstract or derived measurements computed from element level measurements" (col. 15, ll. 12-14), which indicates that components identified as enabling a service are selected and measured. Bhoj's teaching that the local system 240 provides an abstract view "that is independent of the underlying implementation" (col. 11, l. 35) does not suggest that components are not identified and measured, but only that the component measurements are presented in an abstract view.

Bhoj describes that the "service model also identifies the measurements and metrics that are available from each component" (col. 9, ll. 41-43). The local measurement/management system 240 (local system 240) in Figure 5 "collects all the management data from the local infrastructure and applications of the underlying data service system of the service management system 100. Based on the management data collected, the local system 240 provides an abstract view of the underlying data service system to the service manager 200 that is independent of the underlying implementation." (Col. 11, ll. 29-35.) The measurement data is stored as attributes in a cache 301 in Figure 7 (col. 11, l. 66 to col. 12, l. 6). The system dependent data of the service model is stored in a system dictionary 312, which controls the storage 301 to receive the management data (col. 14, ll. 22-24). "[T]he management data are abstract or derived measurements computed from element level measurements." (Col. 15, ll. 12-14). Thus, Bhoj teaches "monitoring the one or more selected network components" by the local system 240. The fact that the local system 240 takes element

(component) level measurements and converts them into an abstract view is not precluded by the claim language.

Appellant's arguments that Bhoj does not teach "monitoring" because there is no complete access to a data system is not persuasive. Bhoj provides monitoring within the data service system.

Bhoj describes that in response to a request for verification, the service manager loads the contract template into the contract template module 302 and loads customer dependent data from the customer SLA database 310 into the verification interface 303. The contract template module causes the storage 301 to obtain the actual system management data of the underlying data service system, and "[t]hen the contract template is evaluated in the contract template module 302 by computing the values of the assertions defined in the contract template using the attribute values and customer-specific data (i.e., parameters, bounds, and thresholds)" (col. 15, ll. 18-22). Since Bhoj monitors the network components to determine whether the performance meets the service contract, Bhoj teaches "monitoring the one or more selected network components to determine the state of the service" and "monitoring the state of the service to detect a change in the state."

Bhoj reports the state of the service(s), that is, the extent to which the guarantees offered in the SLA are met. For example, Figure 10, although not described in Bhoj, shows the extent of service conformance for several service components, including ISP access and a mail system.

Bhoj does not describe "when the state of the service changes, determining a cause of the change in the state of the service by performing an action." The rejection relies on Yemini for this step and the specific actions. Yemini describes a method for determining the source of a problem in a complex system of managed components (Abstract), including computer networks (col. 1, ll. 15-22). The Examiner concludes that one of ordinary skill in the art would have been motivated to determine a cause of a problem with the state of the service in Bhoj using the method of Yemini. Appellant argues that the combination of Bhoj and Yemini does not teach or suggest "when the state of the service changes, determining a cause of the change in the state of the service by performing an action" for at least the reason that neither provides awareness over the "state of the service" (Br. 12). Bhoj determines monitoring the state of the service, and Yemini is only required to show that it was known to take action to determine the cause of a problem in a communication system. Appellant does not contest this teaching of Yemini or the motivation to combine in the Briefs. Although Appellant raised the issue of motivation to combine at the oral hearing, it was noted that this argument was not supported by the Briefs--we do not know what the Examiner would have said if presented with the argument. In conclusion, the limitation, "when the state of the service changes, determining a cause of the change in the state of the service by performing an action," would have been obvious over Yemini.

Conclusion

The combination of Bhoj and Yemini teaches or suggests:
(1) "selecting one or more network components on which the service depends from among the plurality of network components"; (2) "mapping the one or more selected network components to the service";
(3) "monitoring the one or more selected network components to determine the state of the service"; and (4) "when the state of the service changes, determining a cause of the change in the state of the service by performing an action." The rejection of claim 4 is affirmed.

Claims 13-17, 19-35, 37-53, and 55-62 - Yemini, Bhoj, and Taghadoss

Appellant argues that Yemini and Bhoj, alone or in combination, fail to teach or suggest the features of: (1) "mapping at least one component of the network on which the service depends to the service"; (2) "monitoring . . . at least one parameter of the mapped network component, the at least one parameter indicating an operational characteristic of the network component that is indicative of a state of the service"; and (3) "monitoring . . . the state of the service to provide service level management for the business process that indicates the current level of service relative to the agreed upon level of service," as recited in claim 13, and the similar features in claims 27 and 49 (Br. 12-14). It is argued that the Examiner errs in finding that "Taghadoss teaches associating a component of the network to the service" because Taghadoss is limited to information associated with the network resources themselves and not mapping to a service (Br. 13).

We agree with Appellant that Taghadoss does not teach mapping to a service, but for the reasons discussed with respect to claim 4, we find that

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Bhoj describes the argued limitations. Accordingly, the rejection of claims 13-17, 19-35, 37-53, and 55-62 is affirmed.

Claims 18, 36, and 54 - Yemini, Bhoj, Taghadoss, and Glitho

Appellant argues that Glitho fails to cure the deficiencies of Yemini, Bhoj, and Taghadoss with respect to the rejection of independent claims 13, 27, and 49 (Br. 14-15). Because Appellant does not argue the separate patentability of claims 18, 36, and 54 but relies on the patentability of the independent claims, the rejection of claims 18, 36, and 54 stands or falls with the rejection of the independent claims. Accordingly, the rejection of claims 18, 36, and 54 is affirmed.

CONCLUSION

The rejections of claims 4 and 13-62 under 35 U.S.C. 103(a) are affirmed.

Requests for extensions of time are governed by 37 C.F.R. § 1.136(b).
See 37 C.F.R. § 41.50(f).

AFFIRMED

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PILLSBURY WINTHROP SHAW PITTMAN, LLP
P.O. BOX 10500
McLEAN, VA 22102b